

Some Recent Books (contd.)

life, becomes easily understandable to the reader of his very notable book, which deals in detail with both the failures and the successes of the various Zeppelins since Count Zeppelin's earliest experiments. And some of the successes were remarkable. How many people to-day realise that *before the war* "Delag," an associated concern of the Zeppelin company, was operating regular commercial services? With hangars at ten towns five airships were flying on regular routes and tickets were obtainable at any office of the Hamburg-America line. Altogether 1,600 flights were made, the ships spent 3,200 hours in the air, 100,000 miles were flown, and 37,250 passengers were carried, without a single accident.

Capt. Lehmann's story of the war years is, of course, a vivid one, for he himself led many of the raids on England. Another point which the book brings home is the valuable services which the Naval Zeppelins rendered to Germany by duties other than raiding. On naval co-operation work, for instance, the L.5, assisting minesweepers, sighted and marked 368 mines in the North Sea in a single day. Then there was the L.59, which was specially fitted out to go to the relief of Lettow-Vorbeck's troops, who were hard pressed by the British in East Africa, and who were in dire need of medical and other supplies. The preparation of the airship was typical of German thoroughness. The cotton envelope was to be made into tents and uniforms. Sleeping bags were to be cut from the gas cells and shirts from the linen partitions. The duralumin framework was to be used for building quarters and a radio station, which would be powered by the ship's five Maybach motors. The catwalk was made of shoe leather, and, in fact, almost every part of the craft was designed for some share in the ultimate purpose. In addition, the cargo was an enormous one, including such items as 311,900 boxes (rounds?) of ammunition, 230 machine-gun belts, 30 machine guns and 61 sacks of medical supplies.

In November, 1917, under the command of Lieut.-Cdr. Ludwig Bockholt, the L.59 flew 2,800 miles non-stop towards her goal; but near Khartoum she received this terse message from the German Admiralty: "Abandon undertaking and return . . . stop . . . enemy has occupied great part of Makonde highland and is already at Kitagari . . . stop . . . remainder of troops attacking Portuguese from the south."

There was almost a mutiny on board, so keen were the crew to complete the task; but Bockholt was too good a sailor to disobey orders. By the time she reached her base the ship had flown non-stop for 95 hours, covering 4,225 miles.

In the chapters dealing with the raids on Britain, Capt. Lehmann speaks constantly of the efficiency of our A.A. guns, which had so often been alluded to as a sort of harmless joke:

"But the anti-aircraft batteries on the ground shot at the tremendous target with rare accuracy and sent one shell after another crashing through the body of the ship. Four aft gas cells were slashed to pieces. All bombs had to be dropped immediately."

The stories of the commercial operations of the Zeppelins in recent years are equally engrossing, though there is a rather irritating lack of chronological arrangement, the chapters jumping backwards and forwards over 30 years in bewildering fashion.

"Kelly's Post Office London Directory, 1938." Price 55s. and 70s. (according to binding). Published by Kelly's Directories, Ltd., 186, Strand, London, W.C.2.

A PART from recording some 700 changes of London street names, the 1938 Directory has several new entries in the classified business section. A directory of "Air Raid Precaution Contractors and Consultants," and another of "Airways Provision Merchants," are two examples.

"Guide du Tourisme Automobile et Aérien au Sahara," price 25/rs. Obtainable through Shell-Mex and B.P., Ltd., Shell-Mex House, Strand, London, W.C.

PROBABLY the only book to contain such information, the Shell Guide to tourists in the Sahara contains maps and routes, notes on each town and village, and details of the accommodation. A town plan is given in many cases, showing the landing ground and the position of the refuelling station. Some places can supply oil and petrol, some only oil, and for those which have no facilities directions and time taken to obtain supplies are stated.

"Aero and Auto Engine Facts and Data," by H. R. Langman; price 2s. 6d. The Technical Press, Ltd., 5, Ave Maria Lane, London, E.C.4.

AN excellent little book in which the author succeeds in explaining in a simple and easily understandable manner the theory of internal combustion engines and the connected formulae. In parts the explanations are made with note-like brevity. Discussions of cooling problems and the different valve systems are included and the electrical and fuel questions are well treated. A great deal of useful data is to be found.



TRICYCLE UNDERCARRIAGES FOR R.A.F.? Fit. Sgt. Andrews, who was responsible for assembling most of the "historic" aircraft seen at the last Royal Air Force Display, snapped at Brooklands on another kind of antique. (Flight photograph.)

Retired, But Busier Than Ever

AFTER some thirty years of active aircraft construction and design, Sir Alliot Verdon-Roe (an article by whom appears in this issue) has decided to place himself on the semi-retired list, and has resigned from the post of chairman of Saunders-Roe, Ltd. That is not to say that he no longer takes an interest in the firm. He is still a director and the president of the company, and will continue in an advisory capacity.

It is typical of "A.V." that he has taken out more patents during the last year or so than ever before in his career; nor are they all confined to aircraft, but include new hull shapes and propelling gear for high-speed motor vessels. "A.V." shares with that other inventive genius Edison an ability to do with very little sleep, and he says that as he grows older (few will believe that he does) he finds that he can do with less sleep. An average of six hours a night has sufficed him during the last year. No wonder he finds time to do so much.

Protecting Operatives' Skins

AN antiseptic compound, *Sternocleanse*, has been produced by a well-known firm of lubricant manufacturers for application to hands and arms as a protection against poisoning and skin troubles in factories.

Two grades are marketed, No. 1 for use prior to contact with grease, oil, tar, etc., and No. 2 for protection against acid and alkaline solutions and chemicals.

A seven-pound sample tin is obtainable for 7s. (post free) from Sternol. Ltd., Royal London House, London, E.C.2.

Shaping Things to Come

FOR many years a large number of popular cars have incorporated self-aligning door hinges, and also windscreens, produced by G. Beaton and Son, Ltd., of Victoria Road, Willesden. The weekly production of some 400 different types of hinge is about 60,000.

This firm, now under the direction and management of Col. L. Sadler, has developed a very efficient aircraft section.

Work at present passing through the department is almost entirely for a well-known medium bomber now entering the Service. The parts produced are elevators, ailerons and rudders and complete cockpit enclosures. Ribs are built up in jigs and the whole of the riveting done in the jig. The members are anodically treated before and after assembly.

For the framework of the cockpit enclosure a very thin-gauge rectangular alloy tube is used and the bending operations are carried out beside the assembly jigs, the tube being loaded with Bandalloy during the process.

Press tools are ready for the production of parts for a single-seater fighter now due for large-scale manufacture and a few yellow chromate-treated Alclad ribs can already be noticed. These will later be treated with protective Cellon aluminium paint.

In another part of Beaton's premises an unusual and apparently most effective rolling machine has been built to the firm's own design. Considerable skill is needed in the first setting and arrangement of wheels, but once begun, most complicated forms are quickly turned out from the strip.